REMARKS

At the time of the Office Action dated March 9, 2004, claims 1-9 and 11-14 were pending, all of which stand rejected.

In this Amendment, claim 5 has been amended to clarify the meaning of the recitation "a predetermined direction," i.e., the recitation is replaced with --said second direction--. Adequate descriptive support for the amendment can be found on, for example, page 8, line 13 to page 9, line 9 of the specification. Care has been exercised to avoid the introduction of new matter.

Claims 1-3, 5 and 7 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Ramanujan et al. in view of Bloom et al.

With respect to claims 1, 5 and 7, the Examiner admitted that Ramanujan et al. fails to teach a plurality of reflective elements including a ribbon-shaped fixed reflective element and ribbon-shaped movable reflective element. The Examiner cited Bloom et al., asserting that the reference teaches the missing feature and concluding a person skilled in the art would have been motivated to modify Ramanujan's array based on the teachings of Bloom et al. to arrive at the claimed invention because there is motivation of providing a light modulator with a high optical throughput and a tolerance for high optical power as suggested by Bloom et al.

Not all the limitations are not taught or suggested by the proposed combination.

Applicant submits that the Examiner has not established a *prima facie* basis to deny patentability to the claimed invention under 35 U.S.C. §103 for lack of the requisite factual basis. To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

The proposed combination of Ramanujan et al. and Bloom et al. does not suggest a laser irradiation device including each and every limitation of claims 1, 5 and 7.

With respect to claim 1, Applicant specifically submits that the proposed combination does not teach "a plurality of reflective elements arranged in a predetermined direction" and a second laser beam "linearly polarized in a direction substantially parallel to said predetermined direction." (emphasis added).

Applicant emphasizes that the Examiner has still misunderstood the meaning of the "predetermined direction," even though Applicant already explained it in the July 11, 2003 response (see page 8, line 7 to page 9, line 11 of the July 11, 2003 response). As shown in Fig. 1 and relevant description of the present Application, the "predetermined direction" corresponds to a direction D1, but not a direction D2. For example, the specification states "rotating the polarization of the laser beam emitted from the laser source 2 by 90 degrees to the direction D1 in which the ribbons 51 are arranged" (emphasis added) (page 8, lines 24-25 of the specification). The description of the specification explicitly teaches that the "predetermined direction" is a direction in which the ribbons 51 (a plurality of reflective elements in the claims) are arranged, and also which is parallel to a polarization direction of the laser beam (a second laser beam in the claim).

Applicant further stresses that the predetermined direction (D1) of the claimed invention corresponds to an "x-axis," not "z-axis" shown in Fig. 7 of Ramanujan et al. In the statement of the rejection, the Examiner asserted that "the individual diffraction gratings (reflective modulator sites 43) containing within each modulator site being arranged along the z-axis" (see paragraph 3 of the Office Action). This interpretation is not correct. As seen from Fig. 7 of Ramanujan et al., the reflective modulator sites 43 are arranged in a direction that is parallel to the x-axis, thus

perpendicular to the z-axis. The Examiner further asserted that "the incident light beam being polarized along the z-axis to match the axis of polarization of the modulator" by citing the following portion (see paragraph 3 of the Office Action).

> Incident light travels along the y-axis, while the polarization state is along the z-axis. Column 7, lines 7-8.

Applicant submits that Ramanujan et al. clearly teaches that the polarization direction is the direction of the z-axis, which is not parallel to the direction in which the plurality of the reflective modulator sites 43 are arranged. Therefore, Ramanujan et al. does not teach that the z-axis is a direction in which the plurality of the reflective modulator sites 43 are arranged, and also which is parallel to a polarization direction of the incident light.

Therefore, Applicant submits that Ramanujan et al. does not teach a laser irradiation device including "a diffraction grating light valve having a plurality of reflective elements arranged in a predetermined direction for converting said second laser beam into modulated signal beams, ... wherein said second laser beam is linearly polarized in a direction substantially parallel to said predetermined direction," as recited in claim 1.

Applicant notes that the above discussion can be applied to claims 5 and 7. Claim 5 recites that "said first laser beam is polarized in a second direction substantially perpendicular to said first direction when converting into said second laser beam," and "a diffraction grating light valve having a plurality of reflective elements arranged in said second direction for converting said second laser beam into modulated signal beams." Claim 7 also recites that "a diffraction grating light valve having a plurality of reflective elements arranged in a predetermined direction for converting said second laser beam into modulated signal beams ... wherein said laser source is so arranged that said first laser beam is linearly polarized in a direction substantially parallel to said predetermined direction." Accordingly, both claims recite that a direction in which a

plurality of reflective elements are arranged is the same as that in which a laser beam is polarized, as recited in claim 1.

Applicant further submits that the secondary reference, Bloom et al., does not cure the above fundamental deficiency of Ramanujan et al. As mentioned by the Examiner, Bloom et al. teaches a light diffraction grating which consists of fixed elements 32 and movable elements 34 (column 6, lines 50-53). Bloom et al. also teaches that the fixed elements 32 and the movable elements 34 present a flat upper surface coated with a reflective region 38 (column 6, lines 62-63).

However, it is submitted that Bloom et al. does not teach that light incident on a light diffraction grating is linearly polarized in a direction parallel to a direction in which a plurality of reflective elements are arranged, as discussed above. Bloom et al. fails to teach a polarization direction of incident light. Bloom et al. also fails to teach the relation between the directions in which the fixed element 32 and the movable elements 34 are arranged. Rather, Bloom et al. teaches a light diffraction grating comprising the fixed element 32 and the movable elements 34 is advantageously "polarization independent" (column 10, line 22). It is Applicant's understanding that such teaching of Bloom et al. positively denies appropriate selection (modulation) of incident light. It is thus apparent to a person skilled in the art that the light diffraction grating of Bloom et al. is polarization independent, and is silent on the polarization direction of light incident on the light diffraction grating.

Therefore, the proposed combination of Ramanujan et al. and Bloom et al. does not teach a laser irradiation device including each and every limitation of claims 1, 5 and 7, even if the proposed combination is assumed to be proper.

Again, Applicant respectfully requests the Examiner to carefully consider the above differences between the claimed invention and what is disclosed in Ramanujan et al. and Bloom et al.

There is no motivation to modify Ramanujan et al. to arrive at the claimed invention.

As argued in the November 11, 2003 response, Applicant again submits that there is no motivation to modify Ramanujan's array based on the teachings of Bloom et al. to arrive at the claimed invention.

To establish the requisite motivation to support a finding of obviousness under 35 U.S.C. §103, "clear and particular" factual findings must be made as to a specific understanding or specific technological principle that would have realistically compelled one having ordinary skill in the art to modify a particular reference to arrive at the claimed invention based upon facts—not generalizations. *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 57 UPSQ2d 1161 (Fed. Cir. 2000); *Ecolochem Inc. v. Southern California Edison, Co.*, 227 F.3d 361, 56 USPQ2d 1065 (Fed. Cir. 2000); *In re Kotzab*, 217 F.3d 1365, 55 USPQ 1313 (Fed. Cir. 2000); *In re Dembiczak*, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999).

Based on the above legal tenet, it is submitted that, in the absence of the teachings of the present application, there is no evidentiary basis for modification of Ramanujan et al.

The claimed invention is patentable.

Based upon the foregoing, Applicant submits that the Examiner has not established a *prima facie* basis to deny patentability to the claimed invention for lack of the requisite factual basis and want of the requisite realistic motivation. Applicant, therefore, respectfully submits that the imposed rejection of claims 1, 5 and 7 under 35 U.S.C. §103 for obviousness predicated

upon Ramanujan et al. in view of Bloom et al. is not factually or legally viable and, hence, solicits withdrawal thereof.

Dependent claims 2 and 3.

If an independent claim is nonobvious under 35 U.S.C. §103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Accordingly, as claim 1 is patentable for the reasons set forth above, it is submitted that dependent claims 2 and 3 which respectively depend from claim 1 are also patentable. The Examiner's additional comments with respect to the claims do not cure the argued fundamental deficiencies of the proposed combination of Ramanujan et al. in view of Bloom et al.

Applicant respectfully traverses the rejections of those claims and solicits withdrawal thereof.

Claims 4, 6, 8, 9 and 11-14 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Ramanujan et al. in view of Bloom et al., and further in view of Reznichenko et al.

In the statement of the rejection, the Examiner asserted that the claimed invention is obvious over the proposed combination of Ramanujan et al., Bloom et al. and Reznichenko et al. This rejection is respectfully traversed.

Applicant submits that as independent claims 1, 5 and 7 are patentable for the reasons set forth above, it is submitted that dependent claims 4, 6 and 8, 9 and 11-14 which respectively depend from claims 1, 5 and 7 are also patentable. *In re Fine*, 837 F.2d 1071. It is also noted that Reznichenko et al. is silent on a laser irradiation device including all the limitations recited in claims 1, 5 and 7. Therefore, the Examiner's additional comments and citation of

Reznichenko et al. with respect to the claims do not cure the argued fundamental deficiencies of the proposed combination of Ramanujan et al. in view of Bloom et al.

Applicant respectfully solicits withdrawal the rejection of claims 4, 6 and 8, 9 and 11-14.

Conclusion.

Accordingly, it is urged that the application is in condition for allowance, an indication of which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, Examiner is requested to call Applicant's attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

MCDERMOTT, WILL & EMERY

Tomoki Tanida
Recognition under 37 C.F.R. 10.9(b)

600 13th Street, N.W.
Washington, DC 20005-3096
(202) 756-8000 SAB:TT:lnm
Facsimile: (202) 756-8087
Date: May 7, 2004